



COLOR VIDEO CAMERA

TK-C1360B

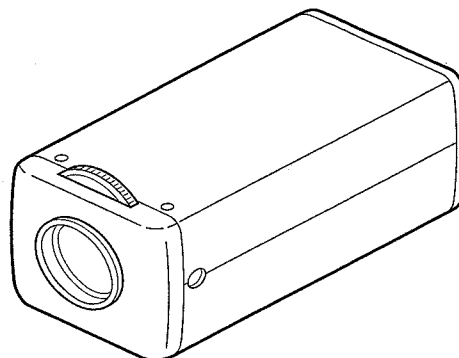
INSTRUCTIONS

For Customer Use:



Enter below the Serial No. which is located on the body.
Retain this information for future reference.

Model No. TK-C1360B

Serial No. _____



SC96879 :U-ver.
SC96880 :E-ver.



CAUTION
RISK OF ELECTRIC SHOCK.
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Information for USA

This device complies with Part 15 of the FCC Rules.
Changes or modifications not approved by JVC could void the user's authority to operate the equipment.

Due to design modification, data given in this instruction book are subject to possible change without prior notice.

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

AVERTISSEMENT:

POUR EVITER LES RISQUES D'INCENDIE OU D'ELECTROCUTION, NE PAS EXPOSER L'APPAREIL A L'HUMIDITE OU A LA PLUIE.

INFORMATION (FOR CANADA)

RENSEIGNEMENT (POUR CANADA)

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Contents

	Page
Features	2
Precautions	3
Controls, connectors and indicators	4
Set-up functions	6
Connection	15
Lens	16
Auto white control	18
How to use the ferrite core	19
Specifications	19

- Always make a prior test recording to help optimise the final recording.
- JVC does not assume any responsibility for recording failures caused by the video camera, VCR or tape cassette.

Features

- High-quality picture provided by the 1/2-inch, 410,000-pixel (380,000 effective pixel) ; for U-ver., 470,000-pixel (440,000 effective pixel) ; for E-ver. high-performance CCD with 470 TV line horizontal resolution and 0.95 lx (25%, F1.2) minimum object illumination.
- Backlight compensation (BLC) detecting areas can be selected from 4 fixed patterns as well as from two user-selectable patterns.
- Highlight inverter (HLI) function makes the picture around the position of a highlight easier to see.
- Lens mount switching mechanism makes it possible to use either a C-mount lens or CS-mount lens.
- Menu set-up system eliminates the need to set operations using switches and controls.
- The Electronic sensitivity enhancement function (auto/manual) provides an appropriate exposure even under low-intensity illumination.
- Equipped with a communication terminal for camera setup.
- Auto White Control is available with button operation.

Note:

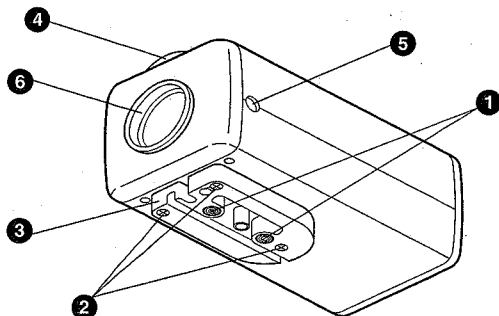
When the motorized zoom lens with a video iris signal of 1 Vp-p is used, even if the object is shot under the same lighting condition, hysteresis phenomenon may occur if the output signal level becomes different from the input signal level as a result of brightness variation.

2

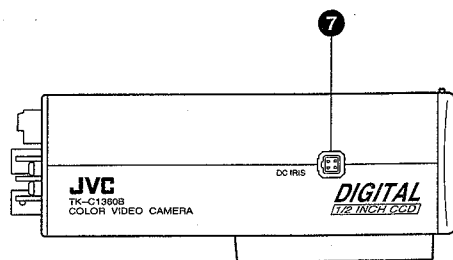
Precautions

- Avoid installing the unit in the following locations.
 - Places exposed to rain or moisture
 - Places with an ambient temperature outside the range of -10 to +50°C (operation) or from 0 to +40°C (recommended).
 - Places subject to excessive dust or to oil or gas.
- When this unit is used with AGC ON, an image recorded in a dark location may look noisy due to the automatic boost in sensitivity. This is not a malfunction.
- When this unit is used with the AUTO white balance control, the recorded colors may differ slightly from the actual colors due to the operation of the automatic-tracking white balance control circuit. This is not a malfunction.
- When a bright object (such as a lamp) is shot, a white, comet-tail phenomenon may be observed above and below the bright object on the screen. This is a phenomenon (called smear) inherent in CCD image pickup devices and is not a malfunction.
- The electronic shutter speed of this unit has been set to 1/60 : U-ver., 1/50 : E-ver. second at the factory. If you use this unit under fluorescent lamps in an area with the local power frequency of 50 Hz : U-ver., 60 Hz : E-ver. switch the shutter speed to 1/100 : U-ver., 1/120 : E-ver. sec. (The sensitivity will be degraded slightly at 1/100 : U-ver., 1/120 : E-ver. sec.)
- When this unit is used with the "AUTO" or "MANU" (2/60 - 32/60 : U-ver., 2/50 - 32/50 : E-ver.) shutter mode in a dark place, the sensitivity enhancement function is activated and the picture movement may become intermittent or white dots may appear on the CCD, but this is not a malfunction.
- Lens aperture will be open when the electronic shutter is operated on AUTO (except FAST 1/60 : U-ver., 1/50 : E-ver.) mode with an auto iris lens in use. To avoid this, set the shutter to any mode other than AUTO or use a manual (fixed) iris lens.
- When the electronic shutter is set to the AUTO mode while this unit is used under fluorescent lamp illumination, flickering may be observed in the picture. This is a phenomenon caused by the relationship between the light's power frequency and shutter speed, and is not a malfunction.
- When using a zoom lens, it is recommended to run the camera with your zoom lens attached and check the backfocus before camera installation. The same applies to an attached lens check the backfocus before camera installation. The same applies to lens level adjustment. (See the lens instruction manual for details.)
- In order to reduce the generation of unnecessary signals, be sure to install the provided ferrite cores to the lens cable and the power cable connected to this unit.
- Avoid installing in places where there is radiation. This could damage CCD and other components and cause a malfunction.
- Avoid installing in places where there are strong electromagnetic waves or magnetism. the picture could be distorted.
- Avoid installing in places where the camera would be subject to strong vibrations. This could damage components and degrade the picture.
- When you use this camera, the socket-outlet shall be installed near the equipment so as to disconnect easily.
- Caution for video iris lens operation
If the video iris lens is set to too low a level, malfunction such as the hunting phenomenon, in which the iris opens or closes unintentionally, may occur.
In such a case, first set "LEVEL" potentiometer on the lens to the H (iris open) position then adjust it to the optimum level.

Controls, connectors and indicators



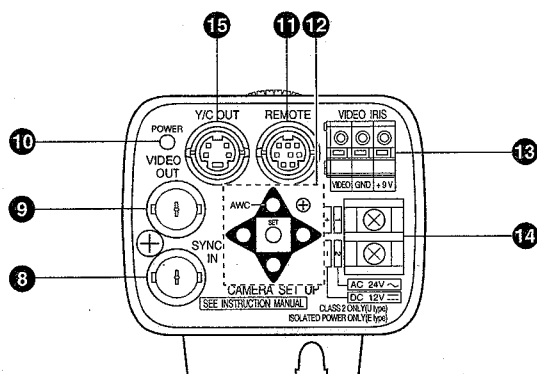
- 1 Camera mounting holes (1/4-inch)**
Use one of these threaded holes when mounting the camera on a mount or turret. Two threaded holes are provided on the front and rear and can be selected according to the installation requirements.
- 2 Camera mounting bracket locking screws (x3: M2.6 x 5mm)**
Do not use any screw longer than 5 mm.
- 3 Camera mounting bracket**
The bracket has been attached on the bottom of the camera before shipment. It can also be attached on the top according to the installation requirements.
To re-attach the bracket use the threaded holes at the top, with the 3 camera mounting bracket locking screws **2**.
- 4 Backfocus adjustment ring**
This ring both allows the adjustment of the backfocus, accommodating both C and CS lenses.



- 5 [BF LOCK] Backfocus locking screw**
This screw locks the backfocus adjustment mechanism.
- 6 Lens mount**
The lens mount is compatible with C-mount lenses (1/2 and 2/3 inch) and CS-mount lenses (1/2 inch).
- 7 [DC IRIS] DC iris connector**
Connect to an auto-iris lens which does not incorporate an EE amplifier. (See "Lens" on page 16.)

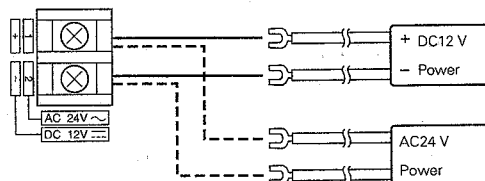
4

Controls, connectors and indicators (continued)



- 8 [SYNC IN] Sync signal input connector**
This BNC connector accepts the input of an external sync signal such as a composite video (VBS) or black burst (BB) signal. When a sync signal is input into this connector, the camera operation is automatically synchronized with the external sync signal. The 75-ohm termination of this connector can be switched on/off on the menu screen as required. (For details, see "TERM. [75-ohm termination setting]" on page 7.)
- 9 [VIDEO OUT] Video signal output connector**
This BNC connector outputs a composite video signal. Connect this to the video input connector of a video monitor, switcher, etc.
- 10 [POWER] Power indicator lamp**
This lights when power is supplied to the camera.
- 11 [REMOTE] Communication connector**
Exclusive connector for use in communication.

- 12 [CAMERA SET UP] Camera set-up screen operation buttons**
These buttons are used for the set-up operations or to carry out the Auto White Control.
(For details, see "Setup functions" on page 6 and "Auto white control" on page 18.)
- 13 [VIDEO IRIS] Video iris connector**
Connect to an auto-iris lens incorporating an EE amplifier. (See "Lens" on page 16.)
- 14 [DC12V/AC24V] Power input connector**
Connect a DC 12 V \pm 10% or AC 24 V \pm 10%, 50/60 Hz power supply.



- 15 [Y/C OUT] Y/C output connector**
This 4-pin connector outputs the luminance and chrominance signal.
• Pin configuration of Y/C OUT connector

Pin No.	Signal
1	GND
2	GND
3	Luminance (Y, 1 V(p-p), 75-ohm)
4	Chrominance (C, 0.3 V(p-p), 75-ohm)

Setup functions

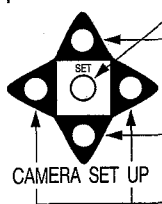
■ CAMERA SETUP screen

The camera is adjusted using the CAMERA SETUP screen.
Press the SET button to display the CAMERA SETUP screen on the monitor.

CAMERA SETUP screen

```
--CAMERA SETUP--
>SYNC ADJUST
VIDEO ADJUST
MODE SELECT
COMMUNICATION
END      MEMORY
```

Operation buttons



- Press to display the SET UP screen (current adjustment condition).
To clear the function, move the cursor > to "END" and press here. The SET UP screen returns to the normal screen.
- Press to move the cursor > or select an adjustment option.
- Press to select the mode of the adjustment item or set its level.

● SYNC ADJUST menu

For settings related to the sync signals.

```
--SYNC ADJUST--
>TERM.      ON
H PHASE     25
SC COARSE   1
SC FINE     128
LINE LOCK   OFF
V COARSE    1
V FINE      128
END
```

1. Move the cursor to "SYNC ADJUST".
2. Press the SET button to display the SYNC ADJUST menu.
(See pages 7 and 8 for the operating procedure.)

● VIDEO ADJUST menu

For settings related to the video signal.

```
--VIDEO ADJUST--
>IRIS       0
COLOR       0
PEDESTAL    0
ENHANCE     0
HUE         0
END
```

1. Move the cursor to "VIDEO ADJUST".
2. Press the SET button to display the VIDEO ADJUST menu.
(See pages 8 and 9 for the operating procedure.)

● MODE SELECT menu

For settings related to the camera functions.

```
--MODE SELECT--
>ID         OFF
AGC GAIN    18dB
SUPER AGC   OFF
SHUTTER     MANU (1/50)
BLC         OFF
AV:Pk       8:2
W.BAL       AUTO (WIDE)
HLI         OFF
END
```

1. Move the cursor to "MODE SELECT".
2. Press the SET button to display the MODE SELECT menu.
(See pages 9 to 14 for the operating procedure.)

figur shows U-ver.

● COMMUNICATION menu

Set this menu when using the REMOTE connector.

```
--COMMUNICATION--
STYLE       DUPLEX
>PARITY     EVEN
STOP BIT    1bit
END
```

6

Setup functions (continued)

SYNC ADJUST menu

■ TERM. [75-ohm termination setting]

```
--SYNC ADJUST--
>TERM.      ON
H PHASE     25
SC COARSE   1
SC FINE     128
LINE LOCK   OFF
V COARSE    1
V FINE      128
END
```

Set according to whether the signal input into the sync signal input terminal ⑧ is to be terminated with 75 ohms or not.
ON : Terminated with 75 ohms
OFF : Open
(Initial set : ON.)

Note:

The terminal is open when the power is OFF.

■ H PHASE [Horizontal phase adjustment]

```
--SYNC ADJUST--
TERM.      ON
>H PHASE   25
SC COARSE   1
SC FINE     128
LINE LOCK   OFF
V COARSE    1
V FINE      128
END
```

Adjustment of the H phase in gen-lock operation. Adjust with reference to another camera (or system).
Variable range : 0 to 50.
(Initial set : 25.)

■ SC COARSE [Sub-carrier phase coarse adjustment]

```
--SYNC ADJUST--
TERM.      ON
>H PHASE   25
SC COARSE   1
SC FINE     128
LINE LOCK   OFF
V COARSE    1
V FINE      128
END
```

Coarse adjustment of the SC phase in gen-lock operation. The SC phase can be varied by up to 90° in each direction.
Adjust with reference to another camera (or system) and together with the SC FINE adjustment.
Variable range : 1, 2, 3, 4.
(Initial set : 1.)

■ SC FINE [Sub-carrier phase fine adjustment]

```
--SYNC ADJUST--
TERM.      ON
H PHASE     25
SC COARSE   1
>SC FINE    128
LINE LOCK   OFF
V COARSE    1
V FINE      128
END
```

Fine adjustment of the SC phase in gen-lock operation.
Variation range : 0 to 255.
(Initial set : 128.)

Notes:

Adjust SC COARSE and SC FINE only after adjusting H PHASE.

■ LINE LOCK [Line lock setting]

```
--SYNC ADJUST--
TERM.      ON
H PHASE     25
SC COARSE   1
SC FINE     128
>LINE LOCK   OFF
V COARSE    1
V FINE      128
END
```

Set when the vertical sync signal of the camera is to be locked with the AC power frequency.
ON : LL mode is activated.
OFF : LL mode is un activated.
Set to OFF when using INT (internal sync) or EXT (external sync).
(Initial set : OFF.)

Notes:

- Do not apply an external sync signal in the LL mode.
- The display will be switched over between ON and OFF, however, the LL function is only available with the power frequency of 60 Hz : U-ver., 50Hz : E-ver.

■ V COARSE [Vertical phase coarse adjustment]

--SYNC ADJUST--

```
TERM. ON
H PHASE 25
SC COARSE 1
SC FINE 128
LINE LOCK OFF
>V COARSE 1
V FINE 128
END
```

Adjustment to align the vertical phase with another camera operating in the line lock (LL) mode. The phase can be varied by up to 180° in courses 1 and 2. Adjust together with the V FINE adjustment.

Variable range : 1, 2.
(Initial set : 1.)

■ V FINE [Vertical phase fine adjustment]

--SYNC ADJUST--

```
TERM. ON
H PHASE 25
SC COARSE 1
SC FINE 128
LINE LOCK OFF
>V COARSE 1
V FINE 128
END
```

Fine adjustment of the vertical phase in the LL mode.

Variable range : 0 to 255.
(Initial set : 128.)

VIDEO ADJUST menu

■ IRIS [Iris level]

--VIDEO ADJUST--

```
>IRIS 0
COLOR 0
PEDESTAL 0
ENHANCE 0
HUE 0
END
```

Adjustment of the luminance level of the video signal.

Variable range : - 5 to 5.
(Initial set : 0.)

- Raise the brightness level
..... Increase the number (▷)
- Lower the brightness level
..... Decrease the number (◁)

Note:

When using a video-iris lens or DC-iris lens or when SHUTTER is set to AUTO, set the AGC GAIN of MODE SELECT menu to 0dB before starting iris level adjustment.

■ COLOR [Color level]

--VIDEO ADJUST--

```
IRIS 0
>COLOR 0
PEDESTAL 0
ENHANCE 0
HUE 0
END
```

Adjustment of the color level of the video signal.

Variable range : - 5 to 5.
(Initial set : 0.)

- To increase color saturation
..... Increase the number (▷)
- To decrease color saturation
..... Decrease the number (◁)

■ PEDESTAL [Pedestal level]

--VIDEO ADJUST--

```
IRIS 0
COLOR 0
>PEDESTAL 0
ENHANCE 0
HUE 0
END
```

Adjustment of the pedestal level of the video signal.

Variable range : - 5 to 5.
(Initial set : 0.)

- To brighten picture
..... Increase the number (▷)
- To darken picture
..... Decrease the number (◁)

■ ENHANCE [Enhancement level]

--VIDEO ADJUST--

```
IRIS 0
COLOR 0
PEDESTAL 0
>ENHANCE 0
HUE 0
END
```

Adjustment of the aperture control level of the video signal.

Variable range : - 5 to 5.
(Initial set : 0.)

- To sharpen the picture tone (by enhancing the aperture control and contour level)
..... Increase the number (▷)
- To soften the picture tone (by attenuating the aperture control and contour level)
..... Decrease the number (◁)

8

Setup functions (continued)

■ HUE [Hue adjust]

--VIDEO ADJUST--

```
IRIS 0
COLOR 0
PEDESTAL 0
ENHANCE 0
>HUE 0
END
```

For adjustment of the hue of the video signal.
Variable range: - 5 to 5. (Initial set: 0.)

- To make yellowish
..... Increase the number (▷)
- To make reddish
..... Decrease the number (◁)

MODE SELECT menu

■ ID [Camera ID name/number]

--MODE SELECT--

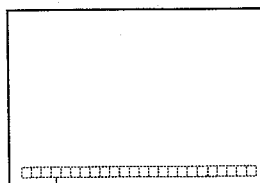
```
>ID OFF
AGC GAIN 18dB
SUPER AGC OFF
SHUTTER MANU (1/50)
BLC OFF
Av:Pk 8:2
W.BAL AUTO(WIDE)
HLI OFF
END
```

The camera ID can be up to 24 characters.

ON : The camera ID is displayed.
OFF : The camera ID is not displayed.
EDIT : The camera ID can be set.
(Initial set : OFF)

figur shows U-ver.

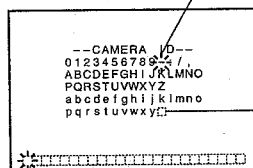
Monitor screen when "ON" is selected (initial setup)



(All 'Space' in initial set)
Camera ID
(max. 24 characters)

Monitor screen when "EDIT" is selected

Blinking character cursor



Camera ID input section

Space

Setting method

1. Select "EDIT" with the ◁ or ▷ button and press the SET button. The CAMERA ID screen appears, with the character cursor and the first character in the input section blinking.

Notes:

The cursor ">" of MODE SELECT menu cannot be moved when ID is set at EDIT.

2. Select a character with the ◁ or ▷ button.
(Enter a space in positions where no character is to be input.)
3. Press the ▽ button to set the character. Then the input section for the next character starts to blink.
(Press the △ button to return to the previous character.)
4. After all characters have been input by repeating steps 2 and 3, press the SET button. The MODE SELECT screen is displayed again.
5. ID appears when set to ON.

■ AGC GAIN [Automatic Gain Control]

--MODE SELECT--

```
ID OFF
>AGC GAIN 18dB
SUPER AGC OFF
SHUTTER MANU (1/50)
BLC OFF
Av:Pk 8:2
W.BAL AUTO(WIDE)
HLI OFF
END
```

Setting the max. gain of the AGC (Automatic Gain Control).

Variable range: 0, 9 and 18 dB.
(Initial set : 18 dB.)

figur shows U-ver.

■ SUPER AGC [High-sensitivity automatic gain control]

--MODE SELECT--

```
ID OFF
AGC GAIN 18dB
>SUPER AGC OFF
SHUTTER MANU (1/50)
BLC OFF
Av:Pk 8:2
W.BAL AUTO(WIDE)
HLI OFF
END
```

Use this function if the picture is not bright enough when AGC GAIN is set to 18 dB.

ON : The gain is further increased.
OFF : The gain is not increased.
(Initial set : OFF.)

figur shows U-ver.

Notes:

- When AGC GAIN is set to 9 or 18 dB or when SUPER AGC is set to ON, dark parts of the picture may look noisy. This is because sensitivity has increased and it is not a malfunction.
- With SUPER AGC set to ON, the level reaches 18 dB even with AGC GAIN at 0 or 9 dB. At this time, the AGC GAIN indication remains at 0 dB or 9 dB.
- The camera ID level can be adjusted by turning SUPER AGC on and off.
- The response of the SUPER AGC may be retarded against acute level changes.

SHUTTER [Electronic shutter]

```
--MODE SELECT--
ID          OFF
AGC GAIN    18dB
SUPER AGC   OFF
>SHUTTER    MANU (1/50)
BLC         OFF
AV:PK       8:2
W: BAL      AUTO(WIDE)
HLI         OFF
END
```

figur shows U-ver.

Set according to whether the electronic shutter is to be switched manually or automatically.

- MANU : To be switched manually.
Options : 32/60, 16/60, 8/60, 4/60,
(U-ver.) 2/60, 1/60, 1/100, 1/250,
1/500, 1/1000, 1/2000,
1/4000, 1/10000
Options : 32/50, 16/50, 8/50, 4/50, 2/50,
(E-ver.) 1/50, 1/120, 1/250, 1/500, 1/1000,
1/2000, 1/4000, 1/10000
- AUTO : Slow or fast shutter mode is selected automatically.
(Initial set : MANU (1/60 : U-ver, 1/50 : E-ver.))

MANUAL

<Setting procedure>

- Press SET button in MANU (1/60 : U-ver., 1/50 : E-ver.) mode, and () are removed to allow setting.
- Change the shutter speed with ◀ or ▶ button.
- Press SET button again, and () comes out to finish shutter speed setting.

AUTO

```
--AUTO SHUTTER--
>FAST      1/100000
SLOW       32/60
MODE       0
END

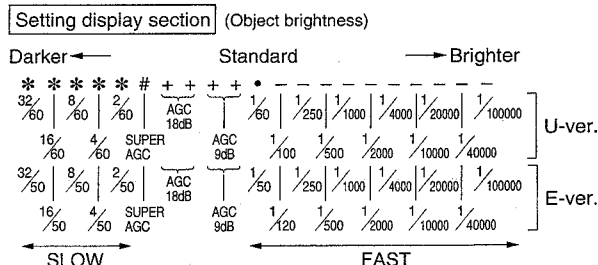
S.AGC:#    AGC :+
SLOW :*    FAST :-
Dark ----- Bright
*****
```

Setting display section
figur shows U-ver.

The AUTO SHUTTER menu is used to set the ranges of the automatic operations according to the object brightness of FAST (fast shutter speed), SLOW (slow shutter speed), AGC (Automatic Gain Control) and SUPER AGC (Super-sensitivity Automatic Gain Control).

<Setting procedure>

- When SHUTTER in the MODE SELECT menu is set to AUTO, Press the SET button, the AUTO SHUTTER menu appears on the screen. The symbols appearing in the setting display section correspond to the setting values for each item as shown below.



- Move the cursor to the item to be changed (FAST, SLOW or MODE).
- Change the setting with the ◀ or ▶ button.
The number and/or order of the symbols shown in the setting display section vary as the setting is changed.

10

Setup functions (continued)

- After completing the setting, move the cursor to END and press the SET button; the MODE SELECT menu appears again.

FAST : Sets the upper limit of the fast shutter speed.

Options : 1/60, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000,
(U-ver.) 1/10000, 1/20000, 1/40000, 1/100000
Options : 1/50, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000,
(E-ver.) 1/20000, 1/40000, 1/100000

(Example) When the upper limit is set to 1/20000

```
--AUTO SHUTTER--
>FAST      1/20000
SLOW       32/60
MODE       0
END

S.AGC:#    AGC :+
SLOW :*    FAST :-
Dark ----- Bright
*****
```

Fast shutter set up indication
figur shows U-ver.

FAST : 1/20000

Fast shutter setup indication : -----

When the object becomes brighter, the shutter speed is automatically changed from the standard 1/50 progressively to 1/20000. In this case, as the upper limit of the fast shutter speed is set at 1/20000, the shutter speed will not exceed 1/20000 even if the object becomes more bright.

Notes:

When the shutter speed increases, the smear which is an acceptable phenomenon of CCD'S will be accentuated.

SLOW : Sets the lower limit of the slow shutter speed.

Options : 2/60, 4/60, 8/60, 16/60, 32/60 : U-ver.
2/50, 4/50, 8/50, 16/50, 32/50 : E-ver.

(Example) When the lower limit is set to 8/60 (U-ver.)

```
--AUTO SHUTTER--
FAST       1/20000
>SLOW      8/60
MODE       0
END

S.AGC:#    AGC :+
SLOW :*    FAST :-
Dark ----- Bright
*****
```

Slow shutter setup indication
figur shows U-ver.

SLOW : 8/60

Slow shutter setup indication : ***

When the object becomes darker, the shutter speed is automatically changed from the standard 1/60 progressively to 8/60. In this case, as the lower limit of the slow shutter speed is set at 8/60, the shutter speed will not be lower than 8/60 even if the object becomes more dark.

Notes:

When the shutter speed is decreased, the sensitivity can be improved but the motion becomes unsteady.

MODE : Sets the order in which the AGC, SUPER AGC and SLOW shutter speed decrease function when the object brightness becomes low.

Options :

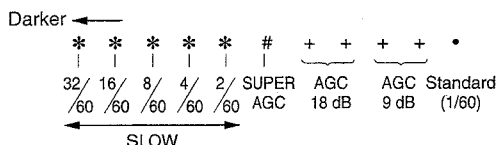
Darker ← Standard →

MODE 0 *****
MODE 1 *****
MODE 2 *****
MODE 3 *****

(* : SLOW
: SUPER AGC
+ : AGC)

(Example) MODE 0 (for U-ver.)

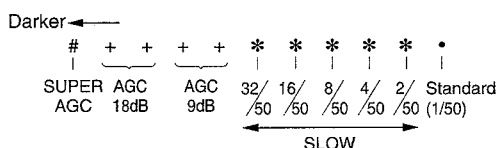
Setting display section (when SLOW : 32/60)



As the object brightness decreases, the auto shutter settings change automatically from the standard 1/60 to AGC (9 dB), AGC (18 dB), SUPER AGC, 2/60, 4/60, 8/60, 16/60 and up to 32/60. Since the AGC is activated before the LOW shutter speeds when the object brightness decreases, this mode is effective for recording objects in fast motion. However, when the AGC is activated, the picture becomes coarse and the S/N deteriorates.

(Example) MODE 3 (for E-ver.)

Setting display section (when SLOW: 32/50)



As the object brightness decreases, the auto shutter settings change automatically from the standard 1/50 to 2/50, 4/50, 8/50, 16/50, 32/50, AGC (9 dB), AGC (18 dB) and up to SUPER AGC. Since the SLOW shutter speeds are activated before the AGC when the object brightness decreases, this mode is effective for recording, giving the S/N priority over the motion.

If the AUTO mode or a high-speed shutter mode is selected under fluorescent lighting, the picture could flicker or the white balance could be unstable.

In such a case, the flickering and white balance variation can be improved by setting the shutter speed to 1/120 in an area where the local power supply frequency is 60 Hz or to 1/50 in an area where it is 50 Hz.

BLC [Back light compensation]

--MODE SELECT--	
ID	OFF
AGC GAIN	18dB
SUPER AGC	OFF
SHUTTER	MANU (1/50)
>BLC	OFF
AV:Pk	8:2
W.BAL	AUTO(WIDE)
HLI	OFF
END	

figur shows U-ver.

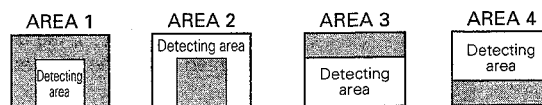
In the following cases, the main unit functions will start.

- 1) When a video iris lens or DC iris lens is used;
- 2) When a SHUTTER is set to AUTO;
- 3) When the AGC is set to 9 dB or to 18 dB;

<Setting procedure>

1. Select AREA with ◀ ▶ buttons.
2. Press the SET button to display the detecting area.
When the EDIT 1 or 2 is selected, set the detecting area as required. (Refer to the next page.)
3. When setting is done, press the SET button again and MODE SELECT screen will resume.

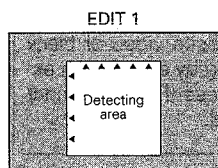
• Fixed area



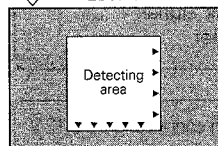
12

Setup functions (continued)

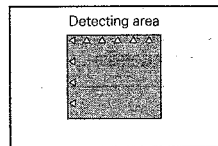
• User set area



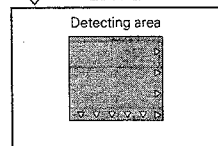
Press the SET button
↓
EDIT 1



EDIT 2



Press the SET button
↓
EDIT 2



EDIT1

Use this area when the metered area is located at the center of the field of view.

- ◀ button Move the detecting area to the left.
- ▲ button Move the detecting area upwards.
- ▶ button Move the detecting area to the right.
- ▼ button Move the detecting area downwards.

EDIT2

Use this area when the metered area is located at the edge of the screen.

- ◀ button ... Move the un-detecting area to the left.
- ▲ button ... Move the un-detecting area upwards.
- ▶ button ... Move the un-detecting area to the right.
- ▼ button ... Move the un-detecting area downwards.

Note:

The detecting areas displayed with AREA1 to 4 and EDIT1 and 2 are for reference and may be different from the actual detecting areas.

■ Av:Pk [Average value: Peak value]

--MODE SELECT--	
ID	OFF
AGC GAIN	18dB
SUPER AGC	OFF
SHUTTER	MANU (1/50)
BLC	OFF
>Av:Pk	8:2
W.BAL	AUTO(WIDE)
HLI	OFF
END	

figur shows U-ver.

Sets the ratio between the average value (Av) and peak value (Pk) in exposure detection.

In the following cases, the main unit functions will start.

- 1) When a video iris lens or DC iris lens is used;
 - 2) When a SHUTTER is set to AUTO;
 - 3) When the AGC is set to 9 dB or to 18 dB;
- Variation range : 5:5, 6:4, 7:3, 8:2, 9:1, 10:0.
(Initial set : 8:2.)

Av value effect : Increase the Av value when a part other than the high light part is dark and looks washed out. This setting is used when there is artificial lighting in a dark room.
(Example: 10:0)

Pk value effect : Increase the Pk value when halation tends to be observed in the highlight part of the picture. (Example: 5:5)

■ W.BAL [White balance]

--MODE SELECT--	
ID	OFF
AGC GAIN	18dB
SUPER AGC	OFF
SHUTTER	MANU (1/50)
BLC	OFF
>Av:Pk	8:2
W.BAL	AUTO(WIDE)
HLI	OFF
END	

figur shows U-ver.

MANUAL : Manual adjustment mode.

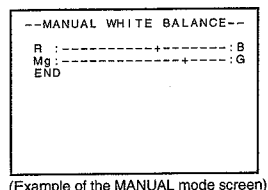
AUTO (WIDE) : Automatic color temperature tracking mode is available in the range of 2500 K to 8000 K.

AUTO (NARROW) : Automatic color temperature tracking mode is available in the range of 2500 K to 6000 K.

AWC : White balance can be adjusted by pressing the AWC button.

For details, see "Auto white control" on page 18.

MANUAL, AWC adjustment screen



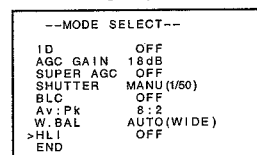
(Example of the MANUAL mode screen)

1. Adjustment screen appears when pressing the SET button on the "MANUAL" or "AWC" mode.
2. Adjust with \triangleleft or \triangleright button.
 \triangleleft button is used for adjustment to red (magenta), whereupon + is moved to R (Mg).
 \triangleright button is used for adjustment to blue (green), whereupon + is moved to B (G).
3. Switching between R/B and Mg/G can be performed with \triangle or ∇ button.

Note:

In AUTO mode, the optimum white balance may not be obtained when the light source has a color temperature outside the adjustment range.
In such a case, set W.BAL to the MANUAL mode.

HLI [Highlight inverter]



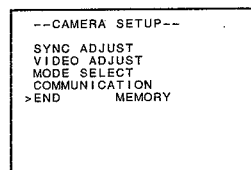
figur shows U-ver.

The HLI function inverts the highlight part of the picture so that the parts around it can be seen more clearly.
Variable values : OFF, ON(1), ON(2), ON(3)
(Initial set : OFF)
ON is adjustable in three degrees. The smaller the number in (), the broader the highlighted area to be effected.

<How to set HLI>

1. Press \triangleleft or \triangleright button, and OFF is changed to ON (2) to enter the HLI mode.
2. Press SET button to remove (), and ON2 is displayed to allow on-screen selection.
3. Monitoring the screen, select one of ON1, ON2 and ON3 with \triangleleft or \triangleright button.
4. Press SET button again, and () comes out to complete setting.

To clear the setup functions



1. Move the cursor ">" to END.
2. Select END mode with \triangleleft or \triangleright button.
MEMORY : Set value holds.
CLEAR : All setting values are initialized.
3. Press SET button to set the END mode, resuming the initial setting screen.

Notes:

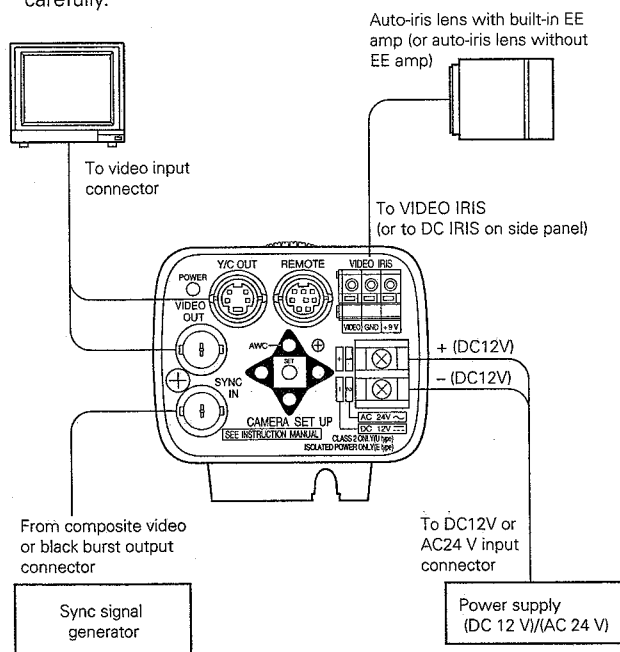
Even if the ID (camera title), PARITY, STOP BIT is cleared, the factory set value will not be resumed.

14

Connection

System connection example

- Do not turn on the power of any component before all connections have been completed.
- Read the instruction manuals of the components to be connected carefully.



Genlock connection

When the external sync signal is a composite video or black burst signal with some systems, genlocking by applying an external sync input requires the horizontal phase (H PHASE) and/or color phase (SC COARSE) to be adjusted.

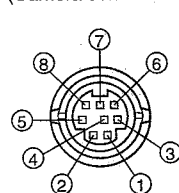
Notes:

- Genlocking is not possible with a signal containing too much jitter, such as a VCR or videodisc playback signal.
- For details, consult a JVC authorized dealer.

Caution

- Be sure to observe the correct +, - polarity when connecting a DC 12 V power input.
- The DC 12 V power should have a ripple voltage of no more than 50 mV.
- Never connect the DC 12 V and AC 24 V power inputs simultaneously.
- Be sure to attach the provided ferrite core to the lens cable or power cable to be connected to this camera. (see page 18 for details)

Communication connector pin layout [REMOTE]
(Camera connector viewed from the outside)



Pin No.	Signal name	Pin No.	Signal name
1	RXH	5	NC
2	TXH	6	RXC
3	NC	7	TXC
4	NC	8	NC

Communication cable provided

Pin No.	1	2	3	4	5	6	7	8	Cover
Lead color	Red	White	Black	Yellow	Blue	Green	Brown	Gray	Shield

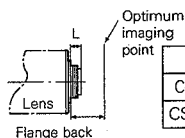
Lens

■ Lens mounting procedure

1. Check the mounting of your lens before attaching it to the camera. The camera has been set for a C mount before shipment (Figure 1-1). When mounting a CS-mount lens, loosen the BF LOCK screw (5 on page 4) by turning it counter-clockwise and turn the backfocus adjustment ring (4 on page 4) in the direction of the arrow in Figure 1-1 to switch the mounting method. (Figure 1-2 shows the camera set for a CS mount lens.)

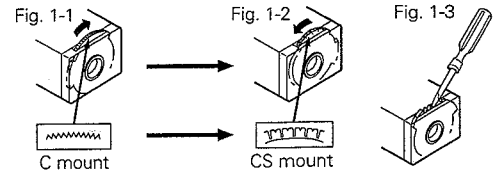
Caution

- The ring cannot be turned by more than a certain amount with your finger. Use a thin object (screwdriver tip, etc.) to turn the ring (Figure 1-3).
- Distance L of the lens mounting section shown in the following illustration should comply with the condition shown in the following table. Never use a lens with a flange back distance L greater than, the one specified in the chart below, as this will damage the inside of the camera or may make normal mounting impossible. Also, be careful not to attempt to mount a C-mount lens while the camera is set for a CS mount.



Lens	Flange back	Distance L
C-mount lens	17.526 mm	No more than 10 mm
CS-mount lens	12.5 mm	No more than 5.5 mm

Fig. 1



2. Mount the lens on the camera by turning the lens clockwise and adjust its position.
3. When an auto-iris lens is used, also connect the lens cable to the camera.
 - A If the lens does not incorporate an EE amp, connect the cable to the DC IRIS connector on the side panel (Figure 2-1).
 - B If the lens incorporates an EE amp, connect the cable to the VIDEO IRIS connector on the rear panel (Max 50mA).

Fig. 2

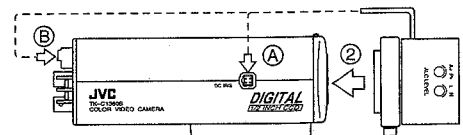
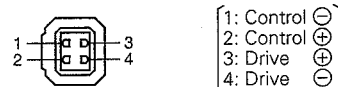


Fig. 2-1

Connector pin layout (DC IRIS) (External view of camera connector)



16

Lens (continued)

- After completing connections as shown in "Connection" on page 14, supply power to the camera, display a picture on the monitor and check the image. Auto-iris lenses have generally been adjusted for the widest range of application before shipment, but readjustment may sometimes be necessary depending on the conditions of the objects to be shot and the lens combination. If the picture recorded using such a lens looks unnatural, readjust as shown below

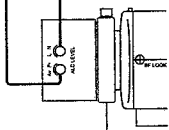
- Auto-iris lens with built-in EE amp

• LEVEL adjustment

Monitor screen	LEVEL turning direction
To darken picture	Counterclockwise (toward L)
To brighten picture	Clockwise (toward H)

• ALC adjustment

This cannot be adjusted on the lens. The ALC should be adjusted as described in "Av : Pk [Average value : Peak Value]" on Page 13.



Auto-iris lens with built-in EE amp

Caution

Do not turn the LEVEL control too far towards "L" as this could cause the AGC of the camera to increase the gain, making the picture look rough.

- Auto-iris lens without EE amp
Re-adjust as described in "IRIS [Iris level]" on page 8.

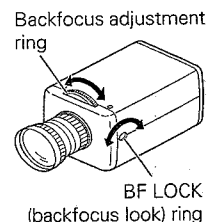
■ Backfocus adjustment

The backfocus has been adjusted before shipment so that the widest range can be obtained with C-mount lenses, but readjustment is necessary when the lens mount is switched to the CS mount or as a combination lens is used. When necessary, readjust the backfocus by the following procedure.

<When a fixed - focus lens is used>

Readjust the backfocus when the optimum focusing cannot be obtained by adjusting the focusing ring of the lens.

1. Loosen the BF LOCK screw by turning it counterclockwise with a screwdriver.
2. Optimize the focus by turning the backfocus adjustment ring.
3. Lock the BF LOCK screw by turning it clockwise.



<When a zoom lens is used>

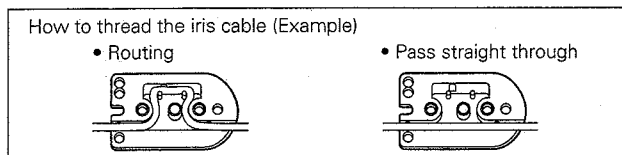
Readjust the backfocus when focusing is lost during zooming (from wide angle to telephoto).

1. Loosen the BF LOCK screw by turning it counterclockwise with a screwdriver.
2. Shoot a fine pattern of as dark as possible an object at a distance of more than 3 meters.
3. Set the zoom for telephoto and adjust the focus with the lens's focusing ring.
4. Set the zoom for wide angle and adjust the focus by turning the backfocus adjustment ring. (Refer to "When a fixed-focus lens is used" above.)
 - Repeat steps 3 and 4 a few times.
5. Lock the BF LOCK screw by turning it clockwise.

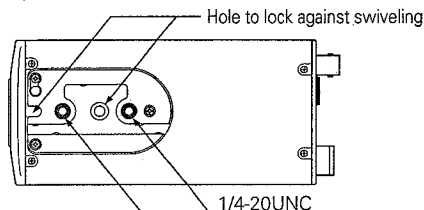
Lens (continued)

■ Fixing the lens cable

If the lens cable is too long and gets in the way, wrap the cable round the camera mounting bracket as shown below.



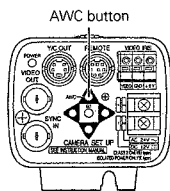
How to mount the camera on a tripod stand, fixing unit or pan / tilt unit.



- Special precautions must be taken for mounting the camera on a wall or a ceiling. Consult with an installation professional without attempting at installation all by yourself.
- We are by no means liable for any damage caused by improper installation.

Auto white control

Each light source has its own color temperature. Therefore, when the main light source lighting an object is changed, the white balance should be adjusted again by pressing the AWC button.



AWC OPERATION
DURING OPERATION

AWC OK
DISPLAYING RESULT

AWC NG : OBJECT
OBJECT ERROR

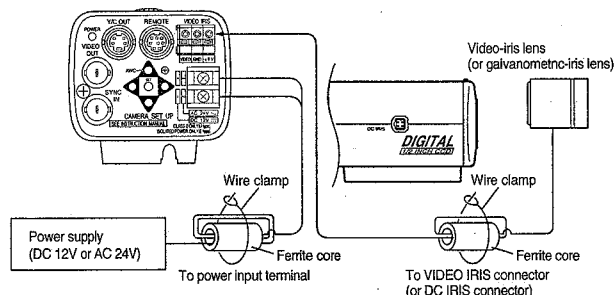
AWC ERROR : LOW LIGHT
LOW LIGHTING

AWC ERROR : HIGH LIGHT
OVER LIGHTING

1. Place a white object under the same lighting condition as the object to be shot and zoom in to fill the screen with white.
2. When the **AWC** button is pressed for approx. one sec., the white balance is adjusted for the object being recorded.
3. During the time when the Auto White function is operated, "AWC OPERATION" is displayed (for approx. 0.5 sec.). When the appropriate white balance is acquired, "AWC OK" is displayed.
4. Error message display
 - **NG : OBJECT**
Displayed when there is not enough white color on an object or the color temperature is not suitable.
By taking a shot of a white object to fill the screen, adjust the white balance again.
 - **ERROR : LOW LIGHT**
Displayed when the light is low. Increase the illumination then re-adjust the white balance.
 - **ERROR : HIGH LIGHT**
Displayed when the light is too bright. Decrease the illumination then re-adjust the white balance.

How to use the ferrite core

To retain electromagnetic compatibility, use the provided ferrite cores when connecting to the lens or the power source.



Notes:

Install the ferrite cores within 50 mm of the camera-side connectors. (Fasten the ferrite core with the wire clamp provided.)

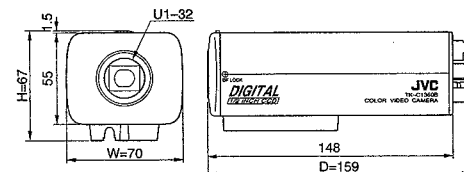
For lens connection : Pass the lens cable through the ferrite core twice and connect it to the camera.

For power supply connection: Pass the power cable through the ferrite core three times and connect it to the camera.

Specifications

Image pickup device		: 1/2-inch, interline-transfer CCD
Effective pixels	U-ver.	: 380,000 pixels [768(H) x 494(V)]
	E-ver.	: 440,000 pixels [752(H) x 582(V)]
Sync systems		: Internal, external, Power sync (60 Hz areas only)
Scanning frequency	U-ver.	: 15.734 kHz (H), 59.94 Hz (V)
	E-ver.	: 15.625 kHz (H), 50.0 Hz (V)
Horizontal resolution		: 470 TV lines (H)
Video S/N		: 48 dB
Minimum illumination		: 0.95 lx (25%, F1.2, AGC 18dB)
		: 0.03 lx (25%, F1.2, AGC 18dB, SLOW 32/60)
Lens mount		: C/CS mount
Power supply		: AC 24 V 50/60 Hz or DC 12 V
Power consumption	U-ver.	: 6.6 W
	E-ver.	: AC 24 V ~ 50/60 Hz 440 mA, DC 12V ~ 550 mA
Ambient temperatures		: -10 to 50°C (operation), 0 to 40°C (recommended)
Mass		: 660 g
Accessories		: • 4-pin iris plug × 1 • Ferrite core × 2 • Communication cable × 1

Dimensions (Unit: mm)



Design and specifications are subject to change without notice.

JVC

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